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10/689,814

10/20/2003

Martin Aureliano Hassner

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JOSEPH P. CURTIN, L.L.C.
1469 N.W. MORGAN LANE
PORTLAND, OR 97229-5291

EXAMINER

DILDINE JR, R STEPHEN

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,814

Applicant(s)

HASSNER ET AL.

Examiner

R. Stephen Dildine

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,5,6 and 8-10 is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

Specification

It is noted that applicant, in the specification, has used the abbreviation "PB" without further definition. Therefore, this will be taken to mean Petabytes (1015 bytes, SI metric prefix), rather than Pebibytes (250 bytes, International Standard IEC 60027-2) (see the reference by McCorkle).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by that which applicant admits is prior art. Claims 1 and 2 recite "A storage system, comprising a plurality of storage devices arranged in an array having M rows and N columns, M being greater than or equal to three and N being greater than or equal to three" which is shown in Figure 1 [PRIOR ART] (where M= 3 and N=5). Claim 1 then goes on to recite "the array having a Hamming distance of d when P of the storage devices are configured as parity storage devices and (M x N)-P of the storage devices are configured as data storage devices, and the array having a Hamming distance of d+1 when P+1 of the storage devices are configured as parity storage devices and (M x N)-(P+1) of the storage devices are configured as data storage devices", which is an inherent property of the prior art N x M matrix of storage devices (even though applicant may have been the first to discover this property). It is noted that there is no recitation in claim 1 of P+1 of the storage devices actually being configured as parity storage devices and (M x N)-(P+1) of the storage devices are configured as data storage devices but only a recitation of the inherent properties (a Hamming distance of d+1) of such a configuration (a configuration which the admitted prior art M x N array is inherently capable). Claim 2 recites "wherein P=M+N-1" which is shown in Figure 1 [PRIOR ART] (where M=3 N=5 and P=3+5-1=7, P₃₁, P₃₂, P₃₃, P₃₄, P₃₅, P₁₅ and P₂₅ being said P=M+N-1 parity storage devices).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4 and 7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 4 depends from Claim 3 which recites an $M \times N$ storage array where (in the disclosed 3×5 array) there are first predetermined number \times third predetermined number $+ ((M - \text{first predetermined number}) \times N) + 1$ parity storage devices. However, claim 4 recites that there are $M+N+1$ parity storage devices. Applicants have only disclosed the case where $M=3$, $N=5$, the first predetermined number is 2, the second predetermined number is 4 and the third predetermined number is 1 which creates a total of $(2 \times 1) + ((3 - 2) \times 5) + 1 = 2 + 5 + 1 = 8$ parity storage devices (per claim 3) but this is contradicted by dependent claim 4 which recited there are $M + N - 1 = 3 + 5 - 1 = 7$ parity storage devices. Applicant has failed to provide a written description of a case where a first predetermined number \times third predetermined number $+ ((M - \text{first predetermined number}) \times N) + 1$ is equal to $M + N - 1$.

Allowable Subject Matter

Claims 3, 5, 6 and 8-10 are allowed.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hetzler et al. (2005/0015700), Talagala et al. (2003/0167439) and Lee (6,675,318) all show what applicant states is the prior art. Nanda (2004/0078642) shows horizontal and diagonal parity. En (3,831,144) shows an $M \times N$ check matrix. Gagnon et al. (6,167,552) shows orthogonal codes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to R. Stephen Dildine whose telephone number is (571) 272-3820. The examiner can normally be reached on M - F 5:30 am to 2:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


R. Stephen Dildine

R. Stephen Dildine
Primary Examiner
Art Unit 2133